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ABSTRACT

A multifaceted behavioral treatment program designed to modify noncompliance in five hyperactive preschoolers and to train their parents in techniques of maintaining compliant behavior was implemented. Results indicated that hyperactivity and noncompliance were reduced to normal limits. Parents' use of behavior modification techniques were equivalent to that of trained child behavior specialists. Data supported the hypothesis that hyperactivity in the preschool child and noncompliance are operationally equivalent terms, and that a treatment program based upon modification of compliance behavior is an effective means for remediating hyperactivity in preschool children. (Author)

# HYPERACTIVITY IN PRESCHOOL CHILDREN AS NON-COMPLIANCE: A NEW CONCEPTUAL BASIS FOR TREATMENT

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## Abstract

Hyperactivity in preschool children was operationally defined as non-compliance with external demands. A multifaceted behavioral treatment program designed to modify non-compliance in five preschool hyperactive children and to train their parents in techniques of maintaining compliant behavior was implemented. Results indicate that hyperactivity and non-compliance were reduced to normal limits. Parents' use of behavior modification techniques was equivalent to that of trained child behavior specialists. Data supports the hypothesis that hyperactivity in the preschool child and non-compliance are operationally equivalent terms, and that a treatment program based upon modification of compliance behavior is an effective means for remediating hyperactivity in preschool children.

# HYPERACTIVITY IN PRESCHOOL CHILDREN AS NON-COMPLIANCE: A NEW CONCEPTUAL BASIS FOR TREATMENT

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The term hyperactivity as it is currently employed in psychological and psychiatric literature is an ambiguous term with vague operational referents. Rie (1975) stated, "Hyperactivity is one of several inadequately defined designations applied more or less interchangeably to a varying set of problems occurring in childhood." Some authors suggest that the primary defining characteristic of hyperactivity is an abnormally high level of involuntary motor activity (Anderson, 1963; Menkes, Rowe, and Menkes, 1967). Other authors allege that defining characteristics of hyperactivity include short attention span, impulsivity, irritability, low frustration tolerance, and difficulties in visual motor learning (Wender, 1973; Werry, 1968).

While the diagnostic picture of hyperactivity is confused, the psychological future of the hyperactive child under current treatment regimes is indeed bleak (Cantwell, 1975). Alcoholism and sociopathology are among the common adult outcomes for hyperactive children (Morrison and Stewart, 1971). Low self-esteem, poor self-image, depression and a sense of failure are characteristic findings among adolescents who were diagnosed in childhood as being hyperactive (Mendelson, Johnson, and Stewart, 1971).

Failure in school is also a consistent finding. For example, by the age of 11, twenty-one hyperactive children, as compared to six non-hyperactive control children, had repeated at least one grade in school (Minde, Lewin, Weiss, Lavigueur, Douglas and Sykes, 1971).

It is thus clear that 1) there is extensive professional disagreement regarding the essential and salient features of hyperactivity, and 2) current treatment programs based on this vaguely defined concept have been, in many cases, considerably less than successful.

It is the premise of this paper that for all practical therapeutic purposes hyperactivity may be operationally defined as non-compliance and that a treatment program based upon modification of compliance behavior is an effective means for remediating hyperactivity.

## METHOD

### Subjects

Five preschool children (4 males, 1 female) were subjects in this study (see Table 1). The age range at admission was 2.0 to 4.8 years with a mean of 2.8 years. The IQ range as assessed by the Revised Stanford-Binet (Form L-M) was 97 to 135 with a mean of 114.4. Two children were receiving psychotropic medication. Hyperactivity was diagnosed by referring physicians and confirmed by diagnostic evaluation at the Hyperactivity Clinic. Upon admission, subjects were observed to engage in a wide variety of oppositional and maladaptive behaviors such as tantrums, defiance, short attention span, poor speech, and running away from home.

### Instruments

Behar Preschool Behavior Questionnaire (Behar): The extent of the child's hyperactivity and emotional disturbance based upon parent report was measured by the Behar. The Behar is a 30 item, Lickert format, behavior questionnaire. It assesses through parent report children's behavior on four scales: Hostile-Agressive Behavior, Anxious Behavior and Hyperactive and Distractible Behavior, and a composite Total Disturbed Behavior scale.

Drash Individual Compliance Behavior Checklist (Individual Compliance Checklist): The extent of the child's compliance or non-compliance with parental requests was assessed by direct observation through use of the Drash Individual Compliance Behavior Checklist. This checklist is a structured behavior observation

sheet which is administered in five standardized settings with specific tasks required in order to yeild the compliance scores. Children's behavior and consequences administered by parents were assessed as frequencies and percentages of compliance, non-compliance, reinforcement, punishment, shaping and prompting.

Drash Group Compliance Behavior Observation Sheet (Group Compliance Checklist): This form assesses a single child's behavior in a group classroom situation. It is similar to the Individual Observation Sheet in all other aspects.

Parent Training Academic Evaluation (Academic Evaluation): The Parent Training Academic Evaluation is an objective, true-false and multiple-choice exam. The 41 items on this form assess an understanding of theoretical and practical aspects of behavior modification principles.

Procedures

This nine-month intervention program consisted of three major components: training of the child in a group classroom setting, training of the child in individual sessions and parent training in behavior modification techniques through lecture and demonstration.

Children's Group Training: The children's group was instituted in a classroom setting. The main goal was to increase the frequency of the child's compliance with the instructor's commands through the use of positive reinforcement and time-out procedures. Among the behaviors required were bathroom skills, food distribution and consumption and donning and removal of clothing. In addition, attention span and verbal behavior were shaped and strengthened.

Children's Individual Training: One-to-one training sessions between an instructor and a child were implemented to train behaviors not amenable to treatment in the group setting. Expressive and receptive speech were primary foci of this component.

Parent Training: Weekly, three-hour classes in behavior modification tech-

niques were held. These included discussion of theoretical and practical aspects of these procedures. In addition, direct training of the parent in the use of behavior modification methods were conducted for two mother-child pairs at the conclusion of each parent training meeting.

Assessment of the child's behavior was conducted in two steps. First, the parent's rating of the child's behavior prior to admission and after intervention was obtained through administration of the Behar.

Second, two assessments of the child's compliance behavior using the Individual and Group Compliance Checklists were conducted at the end of treatment, one with the child's parent and the second using a trained Child Behavior Specialist (CBS).

Assessment of parent performance was also conducted in two steps. First, their mastery of theoretical knowledge of behavior principles was measured by the Academic Evaluation Test which was administered to the mothers during one of the final training sessions. The relative status of the parents' knowledge of reinforcement procedures was determined by administering the same test to the group of trained CBS's.

The second part of the parental evaluation was a behavioral one based upon observation and analysis of the parents use of reinforcement contingencies during administration of the Individual Compliance Checklist. Their relative competence in behavior control was assessed by comparing their performance with that of the CBS's on the Individual Compliance Checklist.

Data from the tests used was in the form of pre-and post-scale scores on the Behar, frequencies of compliant, non-compliant and tantrum behavior by the child and of reinforcement, punishment, shaping and prompting by the parents and CBS's on the Compliance Checklists. Raw scores were obtained on the Academic Evaluation. T-scores were computed between pre-and post-scores on the Behar, between parents

and CBS's on the Individual Compliance Checklist and between parents and CBS's on the Academic Evaluation.

## RESULTS

Total disturbed behavior fell from the 99th percentile at the beginning of treatment to the 66th percentile upon completion of the program (See Table 2). Hyperactivity and distractibility fell from the 90th percentile to the 52nd percentile. Both differences were significant at the .001 level.

Compliance with parental instructions was observed 77.5% of the time subsequent to treatment (See Table 3). As a point of reference, only 38.6% compliance was observed in a group of 5 hyperactive children who had not participated in this project. No significant differences were found between compliance with parental demands as compared to compliance with those of the trained Child Behavior Specialists.

Finally, high rates of compliance were consistent across settings for these children after treatment (See Table 4). The mean compliance with parental demands in the home was 71%, in the clinic 77.5%, and in the classroom setting 94.5%.

Parents likewise showed significant mastery both of knowledge of techniques of behavior management and of ability to apply the techniques. On the Academic Evaluation parents obtained a mean percent correct of 75 (See Table 5).

Understanding of behavior modification procedures, as measured by the Academic Evaluation, was determined to be the same for trained parents and CBS's (See Table 5). Raw scores for these two populations were not significantly different.

Evaluation of parents' ability to apply behavior modification techniques in the control of their children's behavior upon completion of training indicated that they were equally as proficient in behavior control as were trained therapists (See Table 6). Parents obtained 77.5% compliance while experienced therapists (CBS) obtained 81.6% compliance. The difference between the two groups was not significant.

In addition, trained parents and CBS's were observed to employ similar behavioral consequences with equal frequency, including frequent use of positive reinforcement and very infrequent use of threats, physical force, or other aversive control procedures. Parents who had not received training achieved only 35% compliance with their children, reinforced at lower rates than both the trained parents and CBS's, used more aversive control and physical force, and obtained more acting-out and aggressive behaviors.

## DISCUSSION

The modification of hyperactive and uncontrollable behavior in preschool children was clearly achieved through this behavior modification program. It was based on two primary concepts, namely, that 1) hyperactivity is essentially non-compliance with instructions and 2) hyperactivity can be eliminated through training children to comply with instruction and training parents to use behavioral techniques for maintaining instructional control over their children.

Upon completion of training all children displayed normal compliance with parental demands. Three of the five children were at or below the 50th percentile for hyperactivity as assessed by the Behar. This indicates that the children are no longer considered hyperactive but are within the normal range of behavior.

Not only were the children compliant in one-to-one settings with their parents at the clinic, but they also demonstrated desired behavior with other individuals and in other settings. Compliance with trained child therapists was equally high. In the home and in groups with other children present, these formerly hyperactive, non-compliant children all demonstrated noteworthy increases in the frequency of desired behaviors.

Understanding and active implementation of behavior modification procedures was the consequence of parent training. Not only did the parents demonstrate acceptable levels of the theoretical and practical aspects of these techniques, but they performed as well as Child Behavior Specialists, a group of individuals

trained in behavior modification procedures and experienced in working with severaly disturbed children. Scores on the Academic Evaluation, rates of reinforcement, punishment, shaping and prompting, and demonstrated ability to modify the child's compliance behavior to acceptable levels were not significantly different for either group.

An unanticipated consequence of parent training was the enhancement of individual parental motivation through interaction among the participants. Common problems were considered. Solutions were shared. But most important, frank discussions were held concerning observed resistence to modifying their own behaviors as well as those of their children. It was through these encounters that significant steps toward the acceptance of this treatment program were taken.

Findings from this study support the hypothesis that hyperactivity in preschool children is primarily non-compliance with external demands. The intervention efforts were aimed at modifying compliance behaviors and this was accomplished. The significant fact is that through modification of compliance behavior so-called hyperactivity was also modified. Scores on hyperactivity as assessed by the Behar indicate that for the group this behavior is now within normal limits. The mean score for this sample was at the 52nd percentile, the median score for all children. It can be concluded, then, that a significant relationship exists between non-compliance and the label "hyperactivity". In fact, hyperactivity in the preschool child and non-compliance are synonymous.

In conclusion, this behavior modification program which operationally defined hyperactivity as non-compliance, was effective in achieving its stated goals. Inappropriate behavior was modified across settings and across individuals making demands. In addition, a change in the contingencies employed by the parents sufficient to maintain the achieved behavior changes was accomplished.

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1. Title of Paper HYPERACTIVITY AS NON-COMPLIANCE: A NEW CONCEPTUAL BASIS FOR TREATMENT
(Title must not exceed 10 words)

2. Principal (presenting) author: Philip (first name) W. (initial) Drash (last name)

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Signature Philip W. Drash 30 Jan 1976 Date

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- [x] paper proposal cover sheet
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- [x] 100-word abstract, if requested
- [x] 2 self-addressed postcards

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TABLE 1

SUBJECT DATA

| | INITIALS | SEX | RECEIVING PSYCHOTROPIC MEDICATION | MOS. IN PROGRAM | AGE AT ADM. | IQ |
|---|---|---|---|---|---|---|
| 1. | J.B. | M | No | 9 | 2.4 | 116 |
| 2. | C. McD. | M | Yes | 9 | 2.0 | 97 |
| 3. | S. McW. | M | Yes | 9 | 2.6 | 120 |
| 4. | R. M. | M | No | 7 | 2.3 | 104 |
| 5. | M. P. | F | No | 6 | 4.8 | 135 |
| | | | MEAN: | 8.0 | 2.8 | 114.4 |

TABLE 2

PRE AND POST PERCENTILE RANKS ON THE
BEHAR PRESCHOOL BEHAVIOR QUESTIONNAIRE

| | TOTAL DISTB. BEH. | | SCALE 1 HOSTILE AGG. | | SCALE 2 ANXIOUS | | SCALE 3 H.A. & DISTB. | |
|---|---|---|---|---|---|---|---|---|
| | PRE | POST | PRE | POST | PRE | POST | PRE | POST |
| Mean Percentile Rank | 99 | 66 | 98 | 80 | 92 | 65 | 98 | 52 |

TABLE 3

COMPLIANCE WITH PARENTAL INSTRUCTION BY CHILDREN AFTER TRAINING COMPARED TO COMPLIANCE BY CHILDREN WITHOUT TRAINING

| | N | PER CENT COMPLIANCE |
|---|---|---|
| Children with Training | 4 | 77.5 |
| Children without Training | 5 | 38.6 |

TABLE 4

CHILDREN'S COMPLIANCE BEHAVIOR IN HOME, INSTITUTE AND CLASSROOM SETTING COMPARED

| SETTING | N | PER CENT COMPLIANCE |
|---|---|---|
| Home (with Parent) | 5 | 71.0 |
| Institute (with Parent) | 4 | 77.5 |
| Classroom (with Teacher) | 2 | 94.5 |

TABLE 5

COMPARISON OF TRAINED PARENTS AND EXPERIENCED THERAPISTS ON TEST OF KNOWLEDGE OF TECHNIQUES OF BEHAVIOR MANAGEMENT

| GROUP | N | MEAN SCORE | MEAN PER CENT CORRECT |
|---|---|---|---|
| Parents | 5 | 30.6/41 | 75 |
| Child Behavior Specialists | 5 | 34/41 | 83 |

TABLE 6

COMPARISON OF TRAINED PARENTS, EXPERIENCED THERAPISTS AND UNTRAINED PARENTS IN TECHNIQUES OF BEHAVIOR CONTROL

| PARENT CLASSIFICATION | N | PER CENT COMPLIANCE | % Rf | % S[a] | PER CENT PHYS. PROMPT | PER CENT PREMACK | PER CENT ACT. OUT |
|---|---|---|---|---|---|---|---|
| Trained Parents | 4 | 77.5 | 68 | 1 | .8 | 0 | 0 |
| Experienced Therapists | 5 | 81.6 | 76 | .2 | 3.4 | .4 | 1.8 |
| Untrained Parents | 2 | 35.0 | 54 | 4 | 19.5 | .5 | 10.5 |